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# Clock Oscillators (SMD)



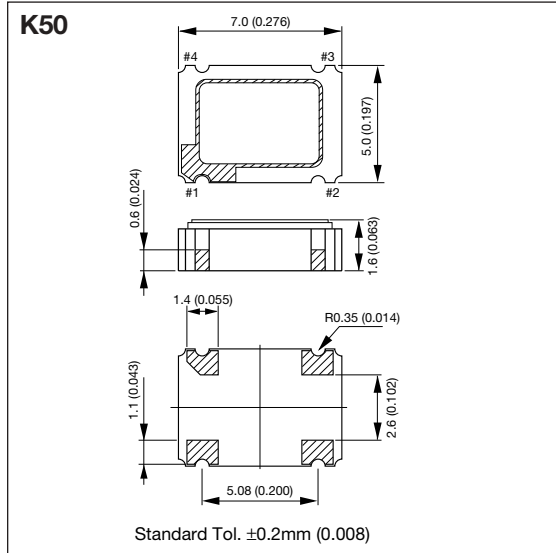
## K50-HC Series (5.0V)

### K50 SERIES



### DIMENSIONS

millimeters (inches)



### FEATURES

- High reliable SMD ceramic package
- Frequency range = 8MHz to 68MHz
- Frequency tolerance =  $\pm 100\text{ppm}$ ,  $\pm 50\text{ppm}$
- Tristate output inhibit

### APPLICATIONS

- Routers
- Switches
- Servers

### HOW TO ORDER

**K50 - HC 1 C S E 40.0000M R**

Series

Tolerance  
 1 =  $\pm 100\text{ppm}$   
 0 =  $\pm 50\text{ppm}$

Packaging

R = Tape and reel,  
 1,000 pcs/reel

Frequency (MHz)

8.0000	27.0000	49.1520
14.31818	29.4989	50.0000
16.0000	30.0000	60.0000
20.0000	32.0000	64.0000
24.0000	33.8688	66.6667
24.5760	40.0000	—
25.0000	48.0000	—

Tristate Output

E = with function (STD)

Duty Ratio

S = 45% to 55% (STD)

Output

C = CMOS/Compatibility

### PIN CONNECTION

Pin #	Function
1	CONTROL
2	CASE GND
3	OUTPUT
4	+V <sub>CC</sub>

### ENABLE/DISABLE

Pin #1	Pin #3
"H" or Open	Oscillation
"L"	High Impedance

### SPECIFICATIONS

Items	Code	Rating	Unit	Remarks
Output Frequency	F <sub>OUT</sub>	8 to 68	MHz	—
Frequency Tolerance	$\Delta F/F$	$\pm 100$ , $\pm 50$	ppm	Over all conditions
Aging	$\Delta F/F$	$\pm 5$	ppm/y	@ 25°C
Operating Temperature	T <sub>OPR</sub>	-10 to 70	°C	—
Storage Temperature	T <sub>STR</sub>	-55 to 125	°C	—
Supply Voltage	V <sub>CC</sub>	5 $\pm$ 0.5	V	—
Supply Current	I <sub>CC</sub>	50 max.	mA	Loaded @ 68MHz
Disable Current	I <sub>DE</sub>	30 max.	mA	—
Duty Ratio	SYM	45 to 55	%	0.5V <sub>CC</sub> DC Level
Output 0 Level	V <sub>OL</sub>	0.1 V <sub>CC</sub> max.	V	I <sub>OL</sub> = 16mA
Output 1 Level	V <sub>OH</sub>	0.9 V <sub>CC</sub> min.	V	I <sub>OH</sub> = -16mA
Rise/Fall Time	T <sub>R</sub> , T <sub>F</sub>	10 max.	nsec	0.1V <sub>CC</sub> -0.9V <sub>CC</sub>
Load Capacitance	C <sub>L</sub>	50 max.	pF	F>50MHz C <sub>L</sub> =15pF (max.)
Enable/Disable Time	—	100 max.	nsec	—
Input Voltage Low	V <sub>IL</sub>	0.8 max.	V	—
Input Voltage High	V <sub>IH</sub>	2.2 min.	V	—
Start-up Time	ST	10 max.	mS	Minimum Operating Voltage to be 0sec

\*Please contact us for inquiries about Extend Operating Temperature Range (-40 to +85°C), available frequencies, other condition.

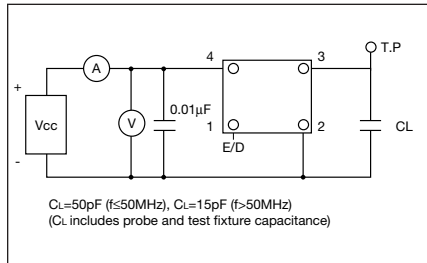
# Clock Oscillators



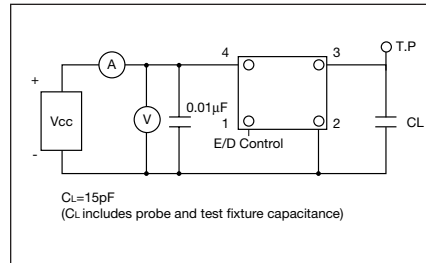
## K30/K50 Series

Kyocera has a wide range of clock oscillators with frequency and package size to match the various customer requirements.

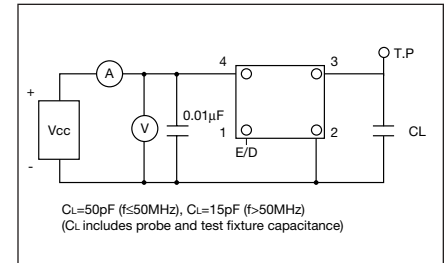
### K50/K30 HC SERIES TEST CIRCUIT



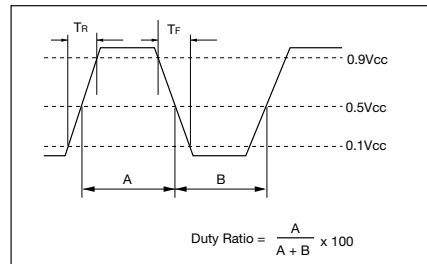
### K50/K30 3C SERIES TEST CIRCUIT



### K50H 3C SERIES TEST CIRCUIT



### OUTPUT WAVE FORM FOR ALL SERIES



## SPECIFICATIONS

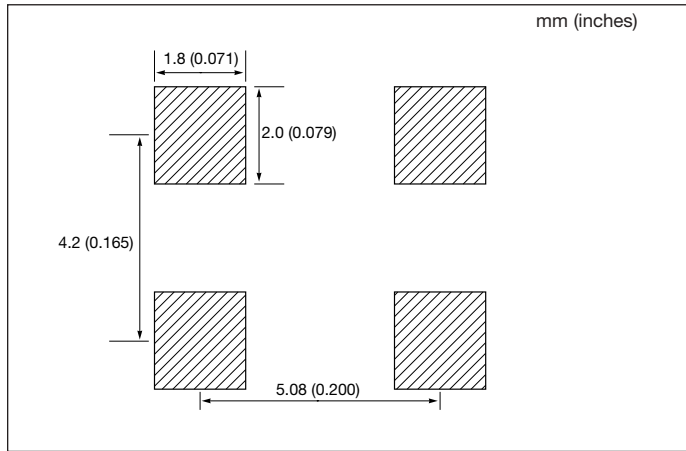
Type	Frequency Range (MHz)	Load	Drive Level	Duty Ratio	Features
K50-HC	8 to 68	$C_L=50\text{pF}$ (max.) ( $f \leq 50\text{MHz}$ )	CMOS $V_{OH}=0.9V_{CC}$ $V_{OL}=0.1V_{CC}$	45/55% (0.5Vcc)	1. IR Reflowable 2. Mini-SMD 3. Tristate Output, Enable/Disable Function F>50MHz $C_L=15\text{pF}$
K50-3C	8 to 80	$C_L=15\text{pF}$ (max.)	CMOS $V_{OH}=0.9V_{CC}$ $V_{OL}=0.1V_{CC}$	40/60% (0.5Vcc)	1. 3.3V Available 2. IR Reflowable 3. Mini-SMD 4. Tristate Output, Enable/Disable Function
K50H-3C	50 to 160	$C_L=15\text{pF}$ (max.)	CMOS $V_{OH}=0.9V_{CC}$ $V_{OL}=0.1V_{CC}$	45/55% (0.5Vcc)	1. 3.3V Available 2. IR Reflowable 3. Mini-SMD 4. Tristate Output, Enable/Disable Function
K30-HC	8 to 50	$C_L=50\text{pF}$ (max.) ( $f \leq 50\text{MHz}$ )	CMOS $V_{OH}=0.9V_{CC}$ $V_{OL}=0.1V_{CC}$	45/55% (0.5Vcc)	1. IR Reflowable 2. Mini-SMD 3. Tristate Output, Enable/Disable Function
K30-3C	8 to 67	$C_L=15\text{pF}$ (max.)	CMOS $V_{OH}=0.9V_{CC}$ $V_{OL}=0.1V_{CC}$	40/60% (0.5Vcc)	1. 3.3V Available 2. IR Reflowable 3. Mini-SMD 4. Tristate Output, Enable/Disable Function

# Clock Oscillators (SMD)

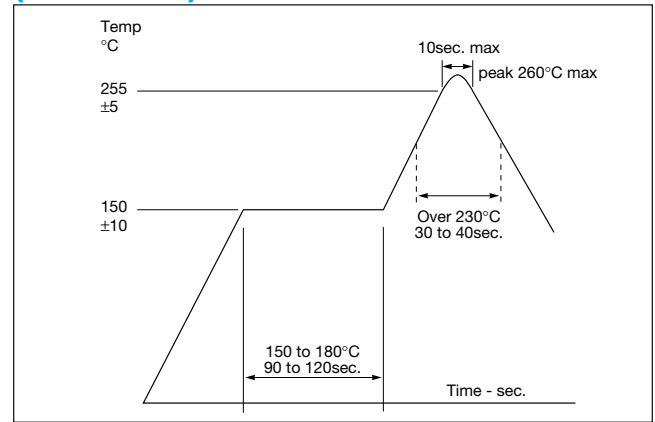


## K50/K50H Series

### RECOMMENDED LAND PATTERN

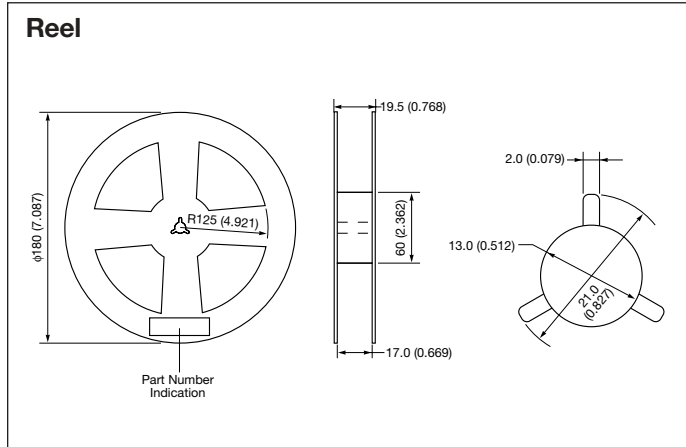


### RECOMMENDED REFLOW PROFILE (Lead Free)

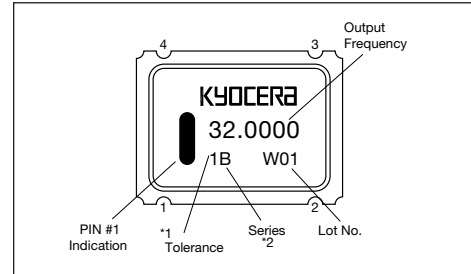


### PACKAGING

millimeters (inches)

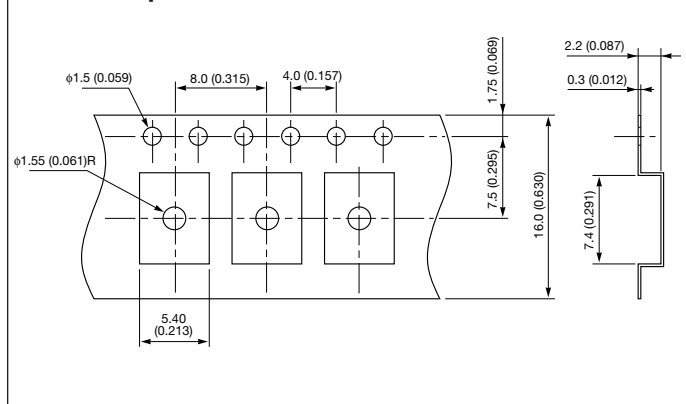


### MARKING SPECIFICATIONS



- \*1 1 =  $\pm 100$ ppm  
0 =  $\pm 50$ ppm  
S =  $\pm 30$ ppm  
U =  $\pm 25$ ppm
- \*2 B = K50-HC  
L = K50-3C-E  
M = K50-3C-SE  
D = K50-CL  
H = K50H-3C-SE

### Carrier Tape



### PACKAGING

1,000pcs/Reel